• COLORADO RIVER •

AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Vol. IX JANUARY 30, 1942 No. 1

A January view from the California bank of the Colorado River a short distance below Parker Dam. This remarkable study in graceful lines and light tones is the work of District Photographer Walter Winzell.

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AQUEDUCT NEWS
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
306 West Third St.
Los Angeles, California

Published monthly in the interest of Field and Office Workers on the Colorado River Aqueduct, and for the information of all other citizens of the Metropolitan Water District.

Vol. IX January 30, 1942 No. 1

Eight Years Ago

Eight years ago, as the District wheeled full steam ahead into the big job of building the country's largest domestic water supply line, the first issue of the Aqueduct NEWS rolled off the press—on January 15, 1934.

It has been, and is the function of the NEWS to serve as an authoritative source of information concerning the affairs of the District. It conveys this information through numerous reader groups, including libraries and reference departments of universities, colleges, high schools and secondary schools, public libraries, editors of daily and weekly newspapers, Federal, State, County and City officials, District employees and former employees, and many, many hundreds of representative citizens in Southern California and throughout the United States.

Circulation of the NEWS, naturally, is concentrated particularly in the thirteen cities of the District and in Southern California generally. But numbered among the regular readers of this publication are engineers, educators and industrial and civic leaders scattered throughout America. A number of copies of the magazine go out regularly to South America and others travel to the British Isles and to other British territories beyond the seas.

Representatives of contracting firms and industrial executives in almost every section of the country were engaged in Aqueduct construction work and in the production of equipment and materials during the building period. Scores of these men have continued to maintain an active interest in the District through the medium of the NEWS.

Numerous are the former Aqueduct employees who keep in touch with the District organization through the NEWS, and through this medium they pass on to a widening circle of new associates the continuing story of the Aqueduct.

Civic, Business Leaders Serve On Water District's Governing Board

Serving without salary or financial compensation of any sort, the members of the Board of Directors of The Metropolitan Water District of Southern California constitute a governing body that has won nation-wide recognition for the high standards it has maintained in rendering public service.

Since the establishment of the District in December, 1928, the Board has been composed of a distinguished group of civic, professional and business leaders who have given their time and talents generously and effectively in molding the policies that have carried forward successfully, honestly, and economically the Aqueduct project.

Four of the nineteen directors now on the Board are charter members of the body. They are Chairman W. P. Whitsett and Director John R. Richards of Los Angeles, Director S. H. Finley of Santa Ana, and Vice-Chairman Franklin Thomas of Pasadena. Director Walter Humphreys comes close to qualifying for this distinction also. His city was annexed to the District in April, 1931, and he has been the one and only officer to represent that municipality on the Board. Likewise, Director D. W. Pontius practically ever since the establishment of the District has been closely associated with the Board. From December, 1930 until late in 1938 he served without salary as Controller. Since January, 1933 he has been a member of the Board.

Director Samuel G. McClure is the only member of the Board who has been accorded the honor of representing two District cities. From November, 1931 to January, 1933 he was the director for Glendale. He resigned from his office when he changed his residence from Glendale to Santa Monica. In March, 1941 he was named as the director for Santa Monica.

Those who have served on the Board since 1933 are Director William M. Cook of Long Beach, Director James L. Norwood of Burbank, Director Perry H. Greer of Los Angeles, Director John H. Ramboz of San Marino, and Director Victor H. Rossetti of Los Angeles, their seniority being in the order they here are named.

Since 1934 Director Charles T. Rippy has represented Torrance on the District's governing body. In 1935 Director Otto J. Emme of Los Angeles, Director E. P. Hapgood of Anaheim, Director Warren W. Butler of Compton, and Director Arthur Taylor of Beverly Hills, in the order given, were appointed to the Board.

Director Herman Nelson of Glendale has served on the Board since 1937. Director Joseph Jensen of Los Angeles joined the membership of the Board in August, 1940.

- DIRECTORY -

BOARD OF DIRECTORS

W. P. Whitsett, Chairman
Franklin Thomas, Vice-Chairman
E. P. Hapgood, Secretary

Anaheim	E. P. Hapgood
Beverly Hills	Arthur Taylor
Burbank	James L. Norwood
Compton	Warren W. Butler
Fullerton	Walter Humphreys
Glendale	Herman Nelson
Long Beach	William M. Cook
Los Angeles	Otto J. Emme
Los Angeles	Perry H. Greer
Los Angeles	Joseph Jensen
Los Angeles	John R. Richards
Los Angeles	Victor H. Rossetti
Los Angeles	W. P. Whitsett
Pasadena	Franklin Thomas
San Marino	John H. Ramboz
Santa Ana	S. H. Finley
Santa Monica	Samuel G. McClure
Torrance	Charles T. Rippy
Executive Secretary	A. L. Gram

OFFICERS REPORTING TO THE BOARD

General Manager and Chief Engineer	Julian Hinds
General Counsel	James H. Howard
Controller	J. M. Luney
Treasurer	Ira R. Pontius

GENERAL STAFF

Chief Electrical Engineer	J. M. Gaylord
Chief Operation and Maintenance Engineer	R. B. Diemer
Assistant to the General Manager	Don J. Kinsey
Right of Way and Claims Agent	Geo. R. LeBaron
Office Engineer	R. A. Skinner
Senior Mechanical Engineer,	R. M. Peabody
Chief Accountant and Assistant Controller	A. W. McKinlay
Assistant Treasurer	C. G. Olson
Hydrographic Engineer	C. C. Elder
Purchasing Agent	E. W. Putnam

DIVISION ENGINEERS

Field Supt., Pumping Plants	T. T. Walsh
Maintenance Engineer, Aqueduct and Transmission Lines	Robt. N. Allen
Softening Plant Engineer	W. W. Aultman

Hand of Providence Seen in Service Rendered Public By Great Water Project

Now let us see, in one particular, how moves the mysterious Hand of Providence.

When the first issue of the Aqueduct NEWS made its appearance eight years ago, in January, 1934, it heralded the fact that a great dream, a paper project, already had been transformed into the biggest construction job then in progress in America. During the months to follow, the Aqueduct builders, carving their way through desert and mountain spaces, were to be greatly increased in numbers and their efforts were to be redoubled before the huge task successfully was to be completed.

Let us, for a moment, look back over the record. For instance, the January 15, 1934 issue of the NEWS carried a summary of Aqueduct work then under way or completed. It said:

"As 1933 passed into history, a review of achievements on the Aqueduct revealed that well over 3,500 men already are at work on a 250-mile front, and construction is under way or contracted for on one-third of the main line of the project."

That was a pretty good start. But there still were quite a few pessimists in Southern California, and elsewhere, who continued to predict that the job would never be completed. Or if it ever was completed, they dolefully insisted, it would cost two or three times the amount of the $220,000,000 bond issue. Well, the Aqueduct has been completed in its initial development provided for under the bond issue, and the water system, as then planned, has been built and placed in service at a cost amounting to $23,000,000 *less* than the original estimates.

The 3500 men at work in January, 1934 were increased to as many as 10,500 men on the job in 1936 and 1937, while during the entire building period somewhat more than 38,000 men were given employment directly on Aqueduct construction work. In addition, approximately 25,000 men throughout the United States were continuously employed during those years producing and handling the vast quantities of tools and materials used on the job.

In fact, the Aqueduct during the lean years of unemployment and business depression was the largest provider of constructive, gainful employment of any project under way in the country. It gave jobs when jobs were most urgently needed; it called for huge orders of heavy equipment, materials and supplies that moved into high gear the idling wheels in scores of mills and factories. It made the cash registers ring in stores throughout the thirteen cities of the District, and sent rent checks out to the landlords of thousands of dwellings occupied by the families of Aqueduct workers.

On the taxpayers' side of the ledger the Aqueduct job, getting into full swing in 1934, was able to secure the services of the best engineering brains and the most skillful and competent construction forces when such men were available in large numbers; it was able to secure promptly and at reasonable costs first quality materials and equipment. The result was an efficiently managed and economically completed Aqueduct construction program.

Looking back again to the pages of that 1934 issue of the NEWS, we find this statement of progress:

"At the present time (January, 1934) construction work is going forward from thirty-two camps. Eighty-two miles of tunneling is under way."

Later, there would be set under way and completed ten more miles of tunnels on the main line of the Aqueduct and 18 miles of tunnels on the distribution system, making a total of 110 miles of tunnels on the Aqueduct. In addition, there would be completed 64 miles of concrete lined canals, 54 miles of concrete, covered conduits; 29 miles of inverted siphons, five giant pumping plants, Parker Dam, five other dams and related works for as many reservoirs, 138 miles of covered conduits and pipe lines on the distribution system now connected with the local water works of District cities, and a modern water softening and filtration plant.

From first to last the task of building the Aqueduct moved forward at top speed. There were no shutdowns, no costly delays. Twenty-four hours a day, seven days a week, in changing shifts, the peace-time army of Aqueduct builders forged ahead at a pace that was to establish scores of construction progress records.

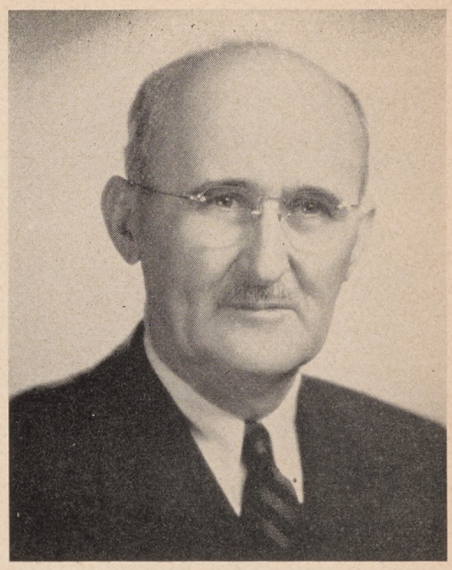
Take, for example, the enormous program of preliminary work that had to be done to make ready for the actual job of building the water line. In that same progress report of the first issue of the NEWS we read:

"Aqueduct construction achievement during the past twelve months included road and power line building programs. The Aqueduct power system, which delivers electricity to the various camps for construction and domestic use, is 446 miles in length. Its building occupied 300 days, making an average of a mile and one-half of line construction every day. During that period, in addition, a substation was erected every ten days, and six large central substations were built for the entire system.

"The Aqueduct road system constitutes what is believed to be the largest highway building program ever launched over a similar period in the history of California. During a period of 180 days, 120 miles of oil surfaced highway was constructed, making an average of approximately two-thirds of a mile every day. E. E. East, chief engineer of the Automobile Club of Southern California, is authority for the statement that this represents what is probably a world's record for road construction."

With a clear purpose and with dispatch, each step in the Aqueduct program was planned and carried forward.

(Continued on page 7)



Commenting on the timely construction and completion of the Colorado River Aqueduct, Julian Hinds, General Manager and Chief Engineer of the District, recently said: "Had the District waited until now to plan and build the Aqueduct, it would have been too late to be of service in the present emergency. To plan the Aqueduct at this time as a project to be made ready for service even ten years hence would be to envision practically the impossible, because the workmen and material are not now available."

1 Cent A Ton

(Continued from Page 4)

high school boy knows, the chemical symbol for water is H_2O. It's a compound composed of two parts of hydrogen to one part of oxygen. By weight, the ratio is 16 parts of oxygen to two parts of hydrogen. Both hydrogen and oxygen are common elements on, in and around Earth. But no laboratory expert ever has been able to put them together and produce water. He may mix them, if he chooses, and stir them all he pleases; he may make them hot or make them cold, or compress them all he will. The combination still remains just a transparent mixture of H and O.

Another strange thing about this H_2O business. Hydrogen is a highly inflammable and explosive gas. That's why the Nazis tried so hard to get Uncle Sam to let them have some helium gas to take the place of hydrogen in their dirigible balloons. Oxygen, on its side, is an element essential to combustion. But the combination of these two elements in the form of water is what firemen use to extinguish conflagrations. That's why the reserve storage of vast quantities of this H_2O in Metropolitan Water District reservoirs now gives the District cities invaluable protection against fire losses in these days of extraordinary hazards.

After making water the one indispen sable necessity of life, Nature went on to provide tremendous quantities of it at various places on Earth. (Someone may say that air is also an indispens able necessity of life. But let's not forget that even the air we breath must first be dissolved in water in our lungs before its oxygen is released into the blood stream.)

Three-fourths of the world's surface is covered by water. The only trouble is that Nature was a bit haphazard in the way she deposited her water supplies. Take, for example, Southern California. This territory has 50 per cent of the wealth and population of the state, but has only one per cent of the state's water, exclusive of the Colorado River. That is why this section of the country is classed as a semi-arid region. Its average annual rainfall of 15 inches is in sharp contrast to the annual average of two and three times that amount in the middle west and eastern states. It is also less than the average rainfall in certain parts of India where about 900 inches have fallen in one year.

Therefore, since water is indispensable, and since nobody ever has been able to devise a substitute, it was necessary in Southern California for man to take up where Nature left off. Consequently, the farsighted and forehanded citizens of The Metropolitan Water District of Southern California set under way some years ago the Colorado River Aqueduct. The Aqueduct, in turn, is the means by which the thirteen cities of the District now have available for their support and protection an abundant and dependable supply of water—water available to these cities at the rate of 1 cent per ton.

Thus, while man never has been able to manufacture water, the people of the Metropolitan Water District have brought it 300 miles across mountains and desert at a reasonable cost.

New District Asks Consent To Annex

There was received by the District Board of Directors at its meeting on January 30 a request from the Board of Directors of the Coastal Municipal Water District for consent to annex to the Metropolitan Water District. The request was referred to the Board's Water Problems Committee for consideration and recommendation.

Organized a number of months ago as a public corporation of a type eligible under the law to be annexed to the M. W. D., the Coastal Municipal Water District includes the areas of Laguna Beach County Water District, South Coast Water District, Newport Mesa Irrigation District, Newport Heights Irrigation District and several hundred acres of unincorporated territory situated south and north of Laguna Beach. The recently organized water district has an assessed valuation of approximately $10,000,000.

In the event the District Board gives its consent to the annexation of the south coast area, it will, at the same time, fix the terms and conditions upon which such an annexation may be effected. It will then be necessary for the proposition of annexation to be submitted to the voters in the coastal district.

In the event the coastal district is annexed to the Metropolitan Water District, it will be possible to provide the new area water service by extending the distribution line which now terminates at Santa Ana.

Here are a couple of B. A. W. C. scenes. (Initials stand for—before Aqueduct was completed.) At left, a view of a precipitous mountain slope along the Aqueduct route where now is located a pumping plant. The scene since has been altered by the excavation of several thousand cubic yards of rock and the erection of a pumping station. At right, a view of a section of Aqueduct distribution pipe line before the trench was backfilled. So sorry, please, if photos do not aid enemy agents.

• MONTHLY REPORT •

(EDITOR'S NOTE: The following is a brief summary of some of the activities of the District as set forth in the monthly report of General Manager Julian Hinds, filed with the Board of Directors in January, 1942, covering work done in December, 1941.)

Construction

Distribution System—District forces completed repairs to portions of Azusa conduit in the Morris Reservoir area. Pressure recorders were installed on the Compton and Long Beach meters, and installation of water level recorders was started at the Eagle Rock control structure.

Parker Power Plant—U. S. Bureau of Reclamation forces continued work on the power house superstructure, forebay structure and switchyard foundations. Fibre conduit for control wiring in trench between the power house and switchyard was placed preparatory to encasement with concrete.

Operation and Maintenance

General—A 24-hour duty patrol covering the main aqueduct, pumping plants, transmission and telephone lines, distribution system and reservoirs was organized immediately after the announcement of hostilities in Hawaii on December 7, 1941.

During the month good progress was made on the construction of the Camp Haan water supply line. Five of the 12 miles of pipe were laid, the pipe connection at Lake Mathews headworks was completed and the pump bases were placed.

Information as to the availability of Colorado River water was furnished the Los Angeles County Council of Defense, the Board of Fire Underwriters of the Pacific and to officers of the U. S. Army, Navy and Air Corps.

Design—Special maps and data were furnished military authorities and the Los Angeles Water Bureau during the month. Details of equipment and construction required were prepared for various distribution system features and requisitions issued for their purchase.

Parker Dam—Bureau of Reclamation forces continued routine operations and the sandblasting and painting of spillway gates. The water surface in Lake Havasu was held at practically the same elevations as during November, 1941, 436.3 and 437.3.

Main Aqueduct—Maintenance was reduced to a minimum after December 7 and patrol work was increased to 24-hour duty. Rains caused some damage to roads east of Rice and between Camino and Iron Mountain camp which necessitated some repairs. Road signs were removed and all large metal surfaces of aqueduct structures which were aluminum-painted are being camouflaged as rapidly as possible.

Pumping Plants—Gene and Copper Basin Reservoirs were filled during the month by operating the pumps at Intake and Gene. Arrangements for complete blackouts on receipt of air-raid warnings were perfected and armed guards on 24-hour duty were stationed at all plants.

Distribution System—A decrease of 889 acre feet since November 30 was recorded in the storage of Colorado River water in Lake Mathews, bringing the total to 84,485 acre feet. All roads near the headworks and across the dam were closed and guards placed at all strategic points. Routine sampling and analyses of water were carried on at the softening plant.

Hydrographic—Assistance on rainfall records, water storage capacities, aqueduct diversions and related matters was given U. S. Engineers, U. S. Weather Bureau and U. S. Geological Survey. Further development of the Colorado River was discussed at meetings of the Colorado River Board of California.

Employment—Eight classified positions were filled during December. There were recorded 20 changes of status, 16 terminations and 37 employment contracts, mainly aqueduct guards, and 278 persons were interviewed. Compared with 1.93 per cent for November, 1940, the net turnover for all positions during November, 1941 was 2.1 per cent.

Right of Way—It was necessary to smudge a portion of the citrus grove on December 23. No frost damage was apparent. Citrus trees were sprayed for brown rot and walnut trees pruned.

Purchasing and Salvage—279 purchase orders and 46 agreements were issued during the month, covering a total expenditure of approximately $28,930.00. Carload forwardings consisted of 20 cars of salt and 3 of other chemicals to the softening plant. Cash sales during the month were active, amounting to $36,493.31, bringing the total salvage disbursements to $1,730,502.86. Salvage stock on hand was appraised at $520,885.17 on December 31, 1941.

Hand of Providence

(Continued from Page 5)

Steadily, rapidly, the vast undertaking moved ever toward its goal. Within its estimated time schedule, and well under its estimated cost, the Aqueduct was completed.

On schedule after schedule the last cubic yard of earth and rock was being excavated; the last block of concrete was being placed; the last pipe section was being lowered into place. Thousands of workmen were completing an eight-year job, hundreds of technicians and engineers were checking off their final work sheets and rolling up their job-stained blueprints.

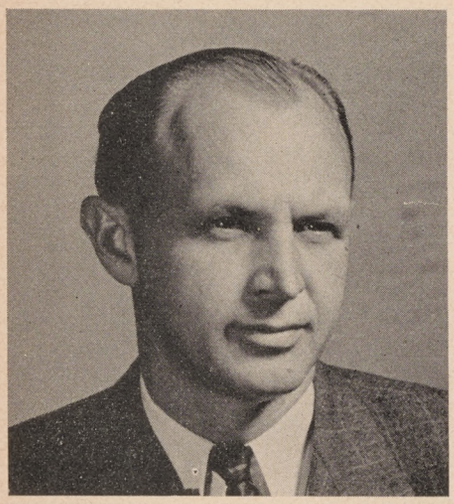
To these men there now came the urgent call of America girding herself for national defense—and war. Men were wanted. America desperately needed skilled craftsmen, trained technicians, experienced and capable engineers. And so, into Southern California's new and rapidly expanding arena of defense and war construction and into the armed forces of the United States marched this Aqueduct army of production veterans. They were ready to go—ready to produce. The value of these thousands of experienced men in accelerating preparedness and industrial efficiency can never be estimated.

And what of the Aqueduct? It was ready for service. To the areas of the thirteen cities of The Metropolitan Water District of Southern California it now made available an abundant and unfailing supply of good water—water to sustain and protect the homes, the war industries and the military establishments that must be maintained in this vital theatre of production and defense.

It was a project that was just in time. In time to provide tremendous employment benefits when such benefits were most needed. In time to keep countless factory wheels moving when a world-wide depression closed down upon them. In time to secure the best and most capable workmen when these men were available. In time to obtain equipment and materials at low costs. In time to supply an army of skilled and experienced production veterans to meet a Nation's urgent defense need. In time to provide an abundant and dependable water supply—and a water reserve—to protect a strategic sector of America's war front.

Thus, moves the Hand of Providence.

NEWS FROM FIELD AND OFFICE



Now comes William A. Farner, attorney by profession and a member of the legal staff of General Counsel Howard. Since January, 1937, he has been in charge of the legal work, investigations and hearings on compensation claims filed with the District. His duties carry the three-cornered responsibility of rendering satisfaction (a) to the District, (b) to the claimants, and (c) to the State of California.

Members of the M. W. D. Employees Federal Credit Union on January 27 held their annual meeting for the election of members to the Board of Directors and the supervisory and credit committees. Members elected to the Board of Directors are Alan Patten, C. G. Olson, Ethel Lockhart, Dolores Sholz and E. V. Reynolds. Those elected to serve on the supervisory committee are A. W. McKinlay, E. B. Rider and G. A. Spassky, while those elected to the credit committee are C. C. Elder, Helen A. Scherer and Thelma Odell. Officers of the Credit Union for the ensuing years are to be elected at a meeting in the near future.

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And now, it's Major Lynn Davis Smith. A number of weeks ago, Major Smith removed the Captain's double bars, which he had worn since entering active military service about a year ago, and fastened onto his shoulder straps the gold oak leaves of his new rank. Early in December he had completed a special Officers' course at Fort Leavenworth where he came out second from the top in a class of 357 officers. He is now attached to the General Staff in Washington, D. C. Major Smith served with the District from 1933 to 1940, first in the Distribution Division and later as editor of the NEWS.

From Hollywood comes word that Robert D. Speers, first editor of the Aqueduct NEWS, is now Casting Director for Universal Pictures. Bob will be remembered by hundreds of present and former aqueducters as publicity and news writer for the District from early in 1931 to August, 1936. Since then he has been in publicity work for the Paramount and Universal motion picture studios. Recently he took over the responsible and top-ranking job of Casting Director for Universal. With his background of work in the educational campaigns in which he so ably participated in the early days of the Aqueduct project, the whirlwind tempo of Hollywood picture production has been just a breeze.

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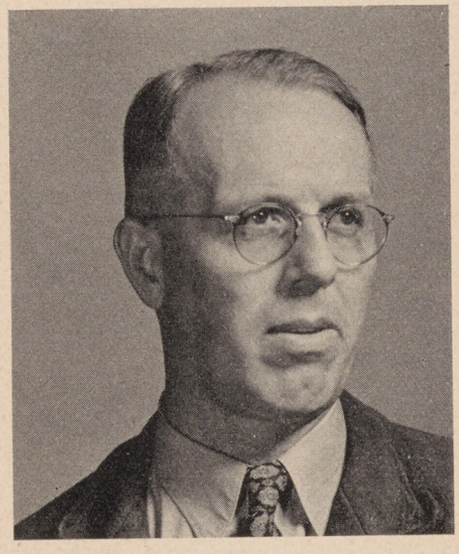
Owen M. Wilson, an Assistant Engineer in the Office Engineering Division, has won his spurs—or should we say, his slide rule—as a Registered Civil Engineer. Recently Owen completed his engineering course at the University of Southern California—studies which he pursued in night classes after work. The other day he was notified he had passed his examinations with the Board of Registration of Civil Engineers.



Since May, 1931, Harold P. Vail has been engaged in responsible engineering work for the M. W. D. In the early days of the Aqueduct project he completed exhaustive and authoritative studies of the water sources and supply systems of the South Coastal Plain. In his work in the Distribution Division and at present on the staff of the Chief Operation and Maintenance Engineer, he qualifies as one of the veteran Aqueduct builders.

Owen M. Wilson, about whom an item on this page gives more detailed facts. He's a charter member of the Aqueduct Oldtimers' Club, having started work on the project in 1926.

Since March of 1934 the NEWS each issue has carried a record of the maximum and minimum temperatures that prevailed during the preceding 30 days at each of the Aqueduct division headquarters. With the completion of construction work on the desert section of the system, this feature is being discontinued. Amazing yarns are told about the altitude records established by desert thermometers. Let's take a look at the book. Well, it reveals that between March, 1934 and December, 1941, the hottest days on the Aqueduct line, between Banning and the Intake, as recorded at division headquarters by official District instruments, were July 18, 1939 and August 11, 1940, when the mercury reached up to 121 degrees above zero, Fahrenheit. The coldest day during the same period was January 20, 1937, when the little red indicator dropped down to 20 degrees above zero. Now, you old Aqueduct desert rats, go on with that story about the "hottest day I ever experienced out on the big job."

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Softening Plant Engineer W. W. Aultman reports that the men stationed at the Softening and Filtration Plant have gone all-out for civil defense work. A number of the men are completing their courses in Red Cross First Aid, and others are starting in new classes. Anxious to complete their defense education at the earliest possible date, the men have arranged for special three-hour classes twice a week.